

Figure 1 STRUCTURE OF A GENE

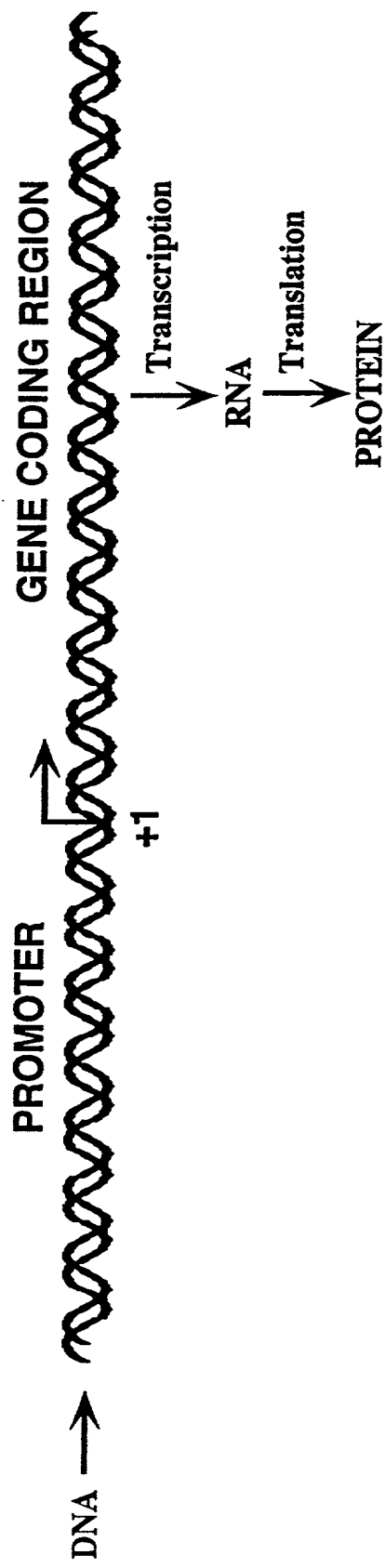
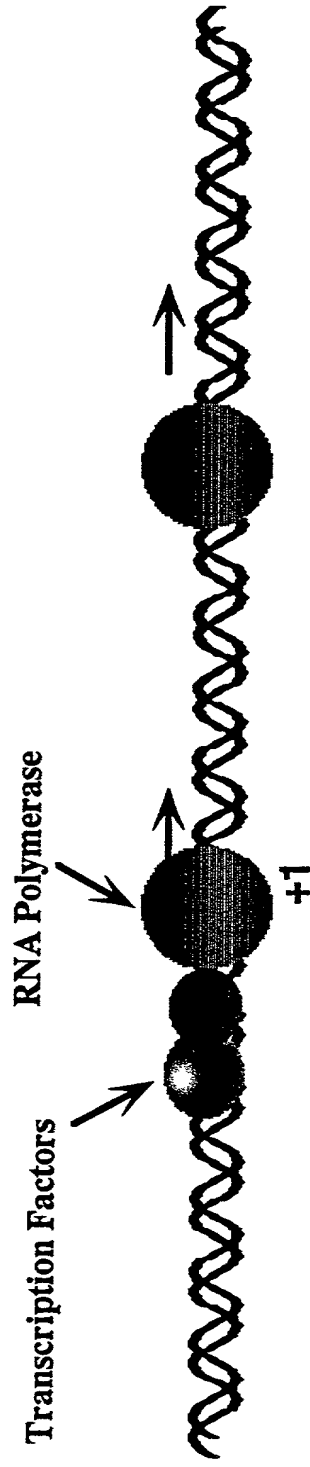


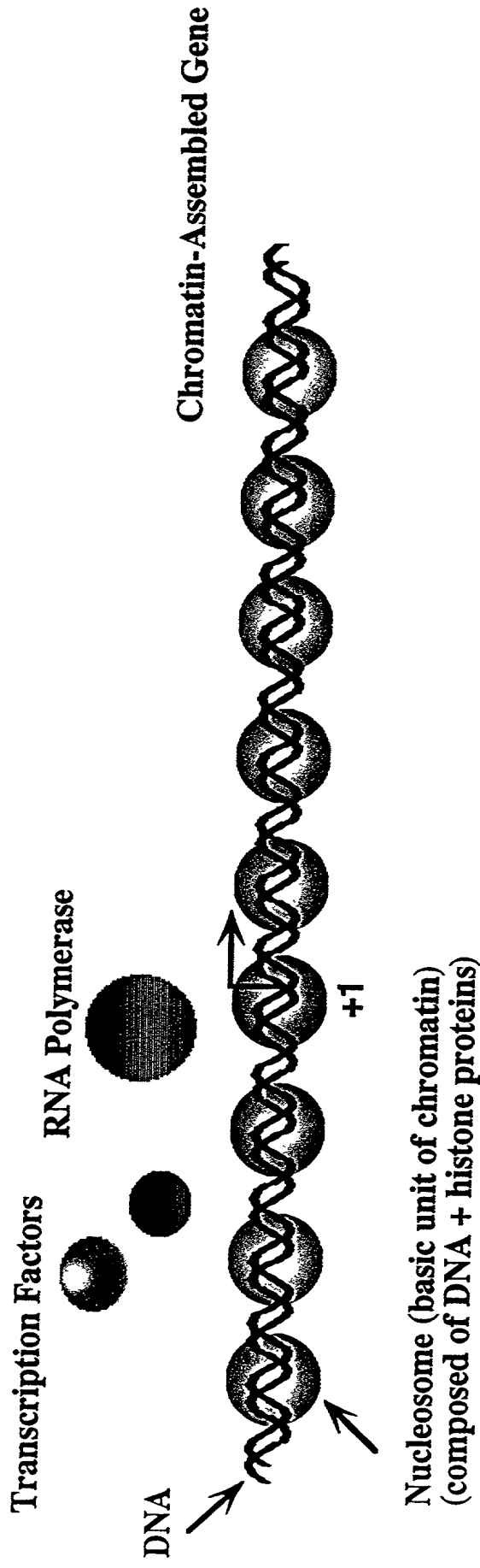
Figure 2 ACTIVE GENE



1. Transcription Factors and RNA Polymerase interact with promoter region

2. RNA Polymerase moves down the gene to read or "transcribe" the DNA coding sequence and produce mRNA

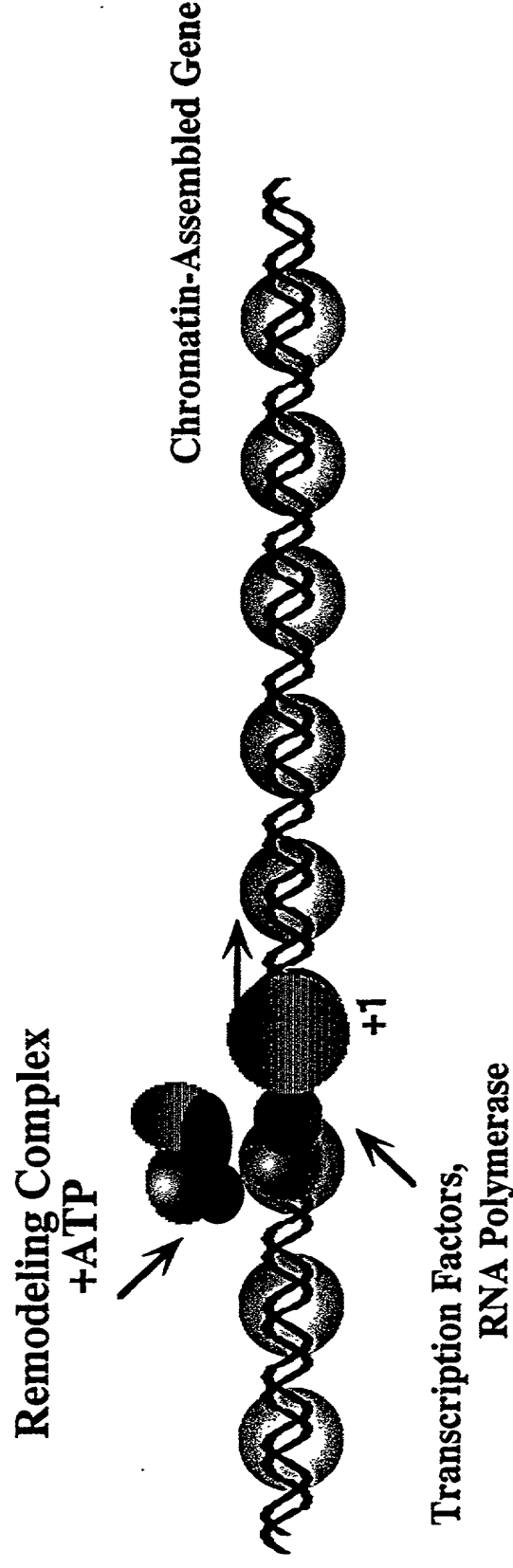
Figure 3 INACTIVE GENE (in Chromatin)



INACTIVE GENE

Nucleosomes block accessibility of Transcription Factors and RNA Polymerase to DNA; Proteins cannot interact with promoter region to activate gene

Figure 4 ACTIVE GENE (in Chromatin)



ACTIVE GENE

Remodeling Complex (SWI/SNF, etc.) is targeted by Transcription Factor and "loosens" nucleosomal structure to facilitate interaction of Transcription Factor and RNA Polymerase with promoter DNA which activates the gene.

SWI/SNF
Chromatin Remodeling Complex

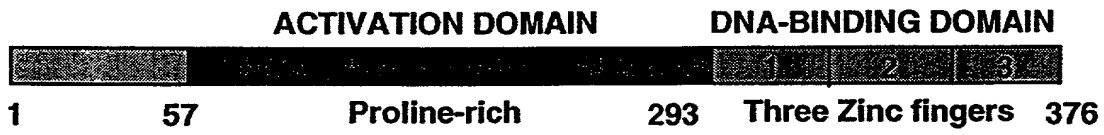
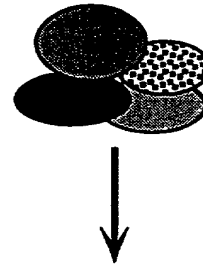


Figure 5

Chromatin Remodeling Complex

SWI/SNF minimal complex



BRG1

BAF 155

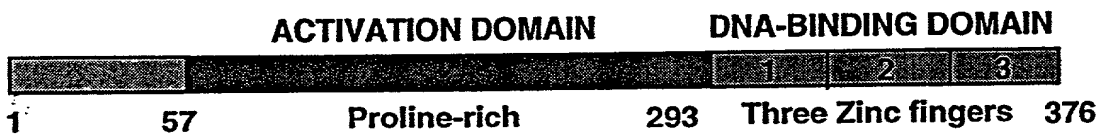
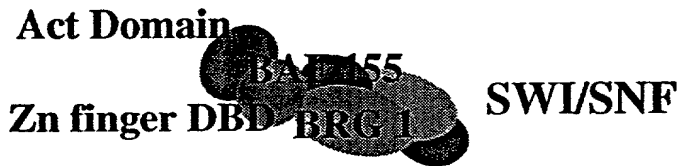
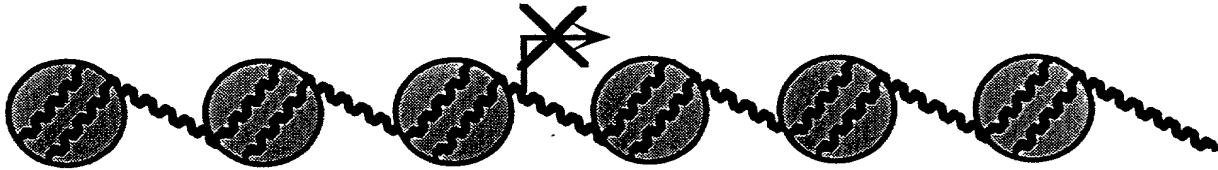


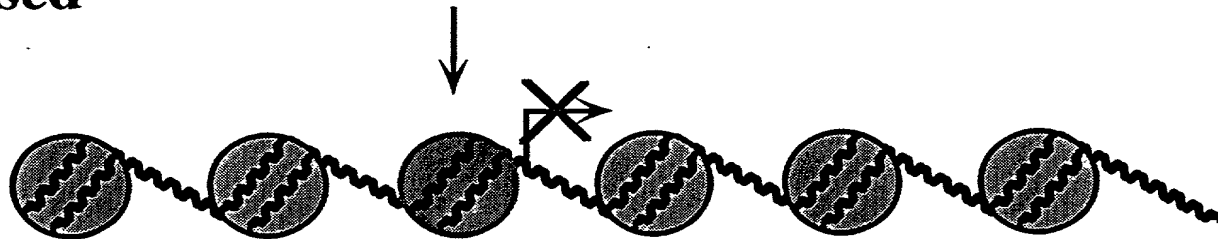
Figure 6

POSSIBLE MECHANISM OF SWI/SNF-DEPENDENT CHROMATIN REMODELING BY INTERACTION WITH ZINC-FINGER DNA BINDING PROTEINS

Inactive

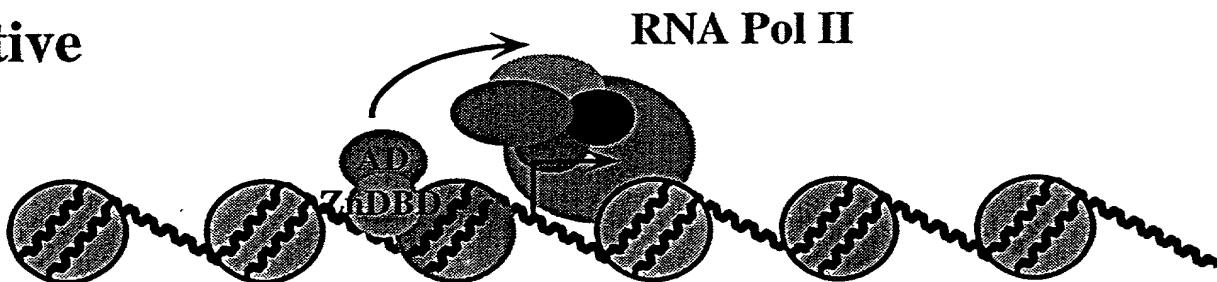


Poised



Chromatin Remodeling

Active



Transcription

RNA Pol II

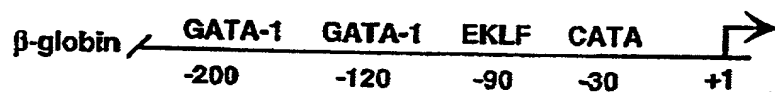


Fig 8

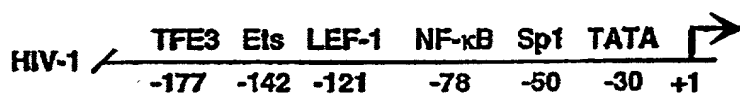


Fig 9



Fig 10